The EXCAVATING ENGINEER

Vol. XXII MAY 1928 No. 5

IN THIS ISSUE:

New Addition to New Plant.
Enlarging the Yale Yards for Frisco.
Solving a Stripping Problem in the Coal Fields.
Sewer for Mayfield Heights, Ohio.

Front Cover Illustration: Opening Davenport Quarry of Dewey Portland Cement Company.

"Out-speeds, out-digs, out-travels and we are sure out-lasts all of them"

After running their first Gas+Air BUCYRUS-ERIE day and night for seven months, the Brown Constr. Co., of Sacramento, Calif.

bought another Gas+Air

AND they write: "This machine has done so well for us that we are always glad to broadcast its merits. Our rock excavation is extremely tough lava — hard on machinery, and another shovel on this work showed a very excessive upkeep cost. But the parts bill on this Gas+Air BUCYRUS-ERIE has been extremely satisfactory.

"This month, running three shifts as a dragline, our estimate was over 40,000 yards. The Gas+Air BUCYRUS-ERIE out-speeds, out-digs, out-travels, and we are sure will out-last any of them."

— Brown Construction Company, Sacramento, California.

And have since bought another Gas+Air —

Because they have found that this machine's direct-connected crowding and swinging engines give unequalled speed on shovel work — and that the air-operated swinging engines give much bigger output on dragline work too.

Note what they write about low up-keep. This machine has the BUCYRUS-ERIE reliability.

Repeat Orders for Gas+Air BUCYRUS-ERIE tell the story!

"BUCYRUS" and "ERIE" — each the most successful manufacturer in its particular field — consolidated January 1, 1928. The unmatched resources of BUCYRUS-ERIE assure the buyer of Unequalled Value, More Efficient Machines, Permanence of the Manufacturer, and a More Complete Field Service.

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Plant of the Dewey Portland Cement Company at Davenport, Iowa.

A Wet Pit Doesn't Worry the Pitman in the Davenport Quarry Where This Electric Shovel is Working.

The 5000-Barrel-a-Day Plant at Dewey, Oklahoma.

The EXCAVATING ENGINEER

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New Addition to New Plant

Dewey Portland Cement Company Operations at Davenport, Iowa, Require Rapid Expansion

WITH the contemplated $300,000 addition to the Dewey Portland Cement Company's Davenport Plant at Buffalo, Iowa (about 8 miles out of Davenport), the total cost of this one plant will come to $3,000,000. This wet-process mill began operations last June, and the addition will furnish a third kiln which will increase the production capacity from 3,000 to nearly 5,000 barrels of cement per day.

Favorably located in the Tri-cities district, the product of this Dewey plant finds a ready market at Davenport, Moline and Rock Island, the entire production being consumed within a radius of 150 miles from the mill. The main lines of the Rock Island and Chicago, Milwaukee and St. Paul railroads pass the plant and give connections with the Burlington and Northwestern. For truck deliveries a concrete highway connects the mill with Davenport on the east and a concrete road will soon be completed to Muscatine on the west. As the plant adjoins the Mississippi River, it is expected that boat transportation will also be available at an early date.

Biting Out 3 Yards of Rock.

Quarry Production by a Single Shovel

The property consists of about 300 acres of land containing all the materials required for the manufacture of cement — excepting, of course, the gypsum — and the deposits are so fortunately placed that loading from the quarry can be handled by a single shovel. The rock formation is covered by an overburden of from 4 to 10 feet. Stripping is being carried on with a P. & H. gas dragline (Cleve Haughton, operator) with a 1¼-yard bucket, and the material is for the present cast back to the edge of the quarry development.

Immediately beneath this overburden lies the Cedar Valley limestone formation with a calcium carbonate content of 84 to 85 per cent, the remainder consisting of argillaceous materials. A fault of shale in this limestone furnishes the additional silica with the alumina and iron which are required for the manufacture of cement. The Cedar Falls limestone strata is approximately forty feet in depth, and is underlaid by Upper Davenport limestone also forty feet in depth and having a much higher calcium content. Below this lies a third forty-foot layer of lower Davenport formation.

When the fault of shale used in the present operations is worked out there is an additional deposit on the property which will be opened. All the overburden contains clay suitable for use in the manufacture of cement, and will be used when the quarrying operations work into the Davenport rock strata.

Quarry Operations to Develop Face 40 Feet High and 600 Feet Long

The initial quarry cut will work out to 120 to 200 feet in width and 600 feet in length, with a face 40 feet high. At present an area 150 feet wide by 700 feet long has been opened to a depth of about 38 feet. Two Keystone No. 3½ Joplin Special electric well drills put down 40-foot holes spaced 12 feet apart, 20 feet back from the face. These are blasted and the rock is then loaded with a Bucyrus-Erie 100-B electric shovel (Joe Leslie, operator) working one 10-hour shift.

The 100-B shovel is the only type of shovel that is practical for this operation on account of its mobility, superintendent Parker advises, and it is giving very good service.

Specially Designed Car Dumper

Phoenix-type 8-yard quarry dump cars carry the rock up a 450-foot incline to the car dumper.

The same motor operating the hoist which pulls the cars from the pit also operates this tipple. It is specially designed by the Dewey Portland Cement Company engineers, and consists of a platform

No Power Cost While Waiting for Cars with This 3-yard Electric Shovel. One of the Keystone Drills Is Working on Top of Bank.

revolving through an arc of about 80 degrees, sufficient to unload the quarry cars into the primary crusher. It requires about 10 seconds to unload each car.

J. C. Buckbee Company of Chicago were the engineers in the construction of this plant of the Dewey Portland Cement Company. Priester Construction Company of Davenport were the main contractors handling most of the concrete work, and the Dewey Portland Cement Company did all the erecting with their own help.

Compact Layout Gives Economy of Operation

Efficient manufacture of cement and economy of operation were kept constantly in mind in designing the Davenport plant. Material from the quarry moves in a straight line from the crushing house through the screening house and to the raw storage building which lies at right angles to the conveyor system. Parallel to this building is the raw and finish grinding department and slurry storage. The kilns are at right angles to the storage, and housed with them is the power plant.

This compact layout permits materials to be transported quickly from one department to another at minimum labor expense. Belt conveyors are used for the raw materials, a sand pump for slurry, and a pneumatic system for carrying finished cement to the storage silos. A P. & H. electric overhead crane with a 2½-yard Hayward bucket handles raw materials and clinker in storage.

Waste Heat Generates 5000 Horse Power

Waste heat from kilns is used to generate 5000 horse power and supplies all the electric current needed for operation of the plant. Sly dust arrestors are used throughout the plant. The Mississippi River furnishes water, which, for the boilers, passes first through a Driscom-Russell evaporator system. A well-equipped and modern machine shop powered by individual electric motors enables the plant to maintain steady service. This shop is a vital part of the equipment, as the plant operates twenty-four hours per day including Sundays and holidays. Wherever possible, throughout the entire plant,

Loading Rock with Bucyrus 100-B Electric at Dewey, Okla.

Cable-hauled 8-yard Dump Cars Carry the Rock to the Mill. The Rock Formation Is Well Shown in This Picture.

roller or ball bearings are used to reduce friction. The office building houses also the laboratories, first aid room and men's lockers and showers.

Another Plant at Dewey, Oklahoma

The general offices of the Dewey Portland Cement Company are at 301 Mutual Building, Kansas City, Missouri. Another of their plants is located at Dewey, Oklahoma, and has a capacity of 5000 barrels a day. Quarry excavation here is handled by a Bucyrus 100-B electric shovel similar to the new machine installed at Davenport. The Dewey, Oklahoma, plant has been in operation for over twenty years. It is a dry process installation and has six 9½ x 8 x 110-foot kilns equipped with waste heat boilers.

The Dewey, Oklahoma, Quarry of the Dewey Portland Cement Company.

Tylers Head Company

Officers of the company are: Frank E. Tyler, Kansas City, Missouri, President and General Manager; H. F. Tyler, Davenport, Iowa, First Vice-President and Plant Manager of the Davenport Plant; D. M. Tyler, Dewey, Oklahoma, Vice-President and Plant Manager of the Dewey Plant; R. W. Moore, Kansas City, Missouri, Vice-President and Secretary; W. E. Tyler, Kansas City, Vice-President and Treasurer; Walter Gray, Kansas City, Vice-President and General Sales Manager; Leo J. Capen, Vice-President and Sales Manager of Davenport Plant. P. R. Chamberlain of Dewey, Oklahoma, is general superintendent and chief chemist of both plants; G. S. Parker, Davenport, Iowa, is superintendent of the Davenport Plant; R. A. Loveland, Dewey, Oklahoma, is chemist of the Dewey Plant; E. S. Ernst, Davenport, Iowa, is chemist of the Davenport Plant, and E. B. Smith, Davenport, Iowa, is mechanical engineer of both plants.

Heaping Them Up in the Dewey, Oklahoma, Quarry.

Dragline Demonstration for Students

At the Royal School of Engineering in Rome, Italy, the students are given instruction in fundamental excavating machine problems by practical demonstration with the Bucyrus 50-B dragline illustrated.

Due to the fact that this machine is built on a scale of three-fourths inches to one foot it is possible to bring it into the class room where it is operated by the manipulation of cranks. It can throw the bucket out, drag in a full load of sand,

swing around and dump the contents most realistically.

The model is made entirely of wood, and was constructed by Vittoria Tomcelli, designing engineer in the office of Messrs. F. Fiorentine & Company of Rome.

Woman's Rights

The occupants of the parlor car of the Limited were startled by the abrupt entrance of two masked bandits.

"Throw up yer hands," commanded the bigger of the two. "We're gonna rob all the gents and kiss all the gals."

"No, partner," remonstrated the smaller one gallantly. "We'll rob the gents but we'll leave the ladies alone."

"Mind your own business, young fellow," snapped a female passenger of uncertain age. "The big man is robbing this train."

Enlarging the Yale Yards for Frisco

Reid & Lowe of Birmingham, Alabama, Move 340,000 Yards in Enlarging Frisco Yards Near Memphis, Tennessee

Lowering the Grade with Bucyrus 41-B Steam Shovel Purchased for the Frisco Yard Job.

IN Danville, Virginia, back in 1914 two young men, R. J. Reid and H. E. Lowe, formed a partnership known as Reid & Lowe. During the first two years of the existence of this partnership, they worked for the Southern in connection with their double tracks from Atlanta to Washington. In 1916 and 1917 they handled construction of a bridge across the Cahaba River for the P. & N. Railway. During this time their head office was moved from Danville, Virginia, to Charlotte, North Carolina. After the Cahaba River bridge was completed Reid & Lowe built the bridge between Sheffield and Florence, Alabama, for the Southern. This was finished in 1919, in which year the headquarters were moved to Birmingham, Alabama, that they might be better able to keep in close touch with the railroad contracts in which they were engaged.

One of their big jobs was handling 100 miles of double track for the Florida East Coast, which included grading, track laying, bridges and buildings. Another big job completed last year was rebuilding 60 miles for the M. S. B. O. P. into Pensacola. This road is now owned by the Frisco. While in Pensacola, Reid & Lowe also built the Frisco shops, roundhouses and other buildings at that point.

In all their work Reid & Lowe have built up an enviable reputation for expeditious completion of their jobs. Usually their contracts are finished ahead of the stipulated time limit.

Flood Delays Yale Yard Construction

The present operations of enlarging the Frisco Company's Yale Yards near Memphis, Tennessee,

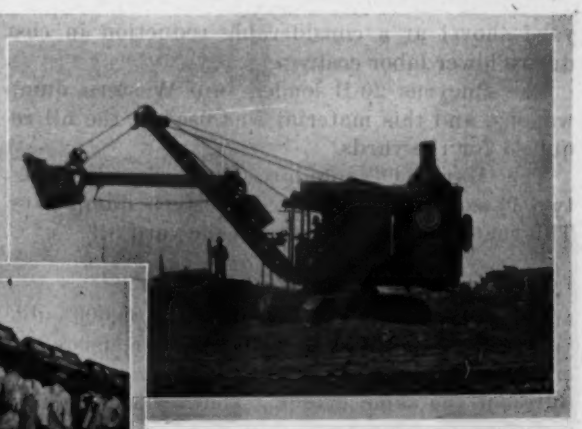
Hughey Brothers' Western Grader Outfit.

was started in March, 1927. For six or eight weeks, due to the flood in the Mississippi district, no progress was made.

The work consists of both cut and fill, with more cut than fill. Cuts handled by shovels ran as deep as 20 to 30 feet, while cuts from 3 to 5 feet were handled by a Western grader outfit. The fill sections in the yard ran from nothing to five feet except when it was necessary to fill ditches.

Sam Cook, Operator, Loading a Train of 12-yard Westerns.

The Black Boys of the Dump Gang Making Snappy Work of a 12-car Train.



Henry Kennedy Finishing a Part of the Grade with the Bucyrus 20-B.

New Ditch Saves Cross Drainage

In addition to the regular excavation for yard grading, a ditch was constructed along the east side, so that, with the lowering of the grade on the east end, the entire yard is drained from the southeast end with only one cross drainage and concrete box in the entire project.

The excavation involved amounts to 340,000 cubic yards of material, mostly clay. Three shovels handled the heavy digging, a Bucyrus 41-B, Sam Cook, operator, a Bucyrus 20-B, Henry Kennedy, operator, and a Marion 60 operated by Jack Casselberry. The shovels operated one ten-hour shift per day.

The extra material in cuts which was not needed in the yards was used to widen banks on fills along the Frisco south from Memphis. Banks were widened from 6 to 8 feet on either side to a depth of 8 to 12 feet. A number of trains were carried across the Mississippi into Arkansas for bank widening.

Three Shovel Operation

The Bucyrus 41-B, purchased especially for this Yale Yard project, handled cuts of from 10 to 30 feet, loading into two 12-car trains of 12-yard capacity Western dump cars. It was from this shovel that the material was hauled for widening banks along the Frisco right-of-way. In checking the work of this modern, full-revolving 1-yard shovel it was found that on this job it delivered about the same amount of yardage as the old-fashioned, railroad-type, 2½-

Shoving Cars In to the Shovel for Dirt for the Main Line.

Subcontractor's Team Outfit Making a Beautiful Grade.

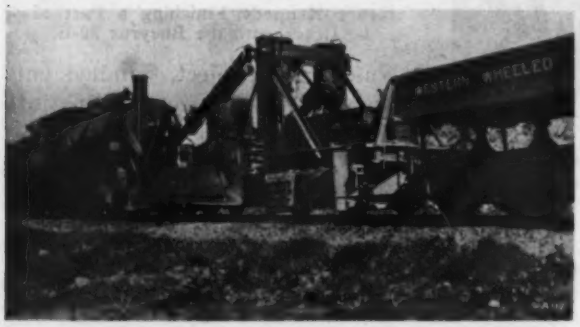
yard shovel at a considerable reduction in cost due to lower labor cost.

The Bucyrus 20-B loaded into Western dump wagons, and this material was used in the fill required for the yards.

The Marion-60 standard-gauge shovel loaded two 11-car trains of 4-yard Western dump cars. This material was also used in the yard fill.

Team Outfits Handle Subcontracts

Hughey Bros. of Memphis handled 80,000 cubic yards on a subcontract. Their work consisted of cuts from 2 to 5 feet, the dirt being moved to fills of about the same height. They have a twenty-team outfit, and handled the excavation with a Western elevating grader pulled by a Holt Tractor and loading into wagons. Hughey Bros. finished their subcontract with exceptional speed, considering the weather.



Jordan Plow on the Way to the Dump.

Henry Hughey, also of Memphis, handled a subcontract of 10,000 cubic yards with twelve teams on wheelers. His work consisted of digging an open ditch which measured 10 feet wide at the bottom and some 700 to 800 feet long.

R. L. Bartholemew of Memphis, Tennessee, subbed 28,000 cubic yards of earth which he handled with a 10-team wheeler outfit.

Putting In Part of the Fill in the Yale Yards.

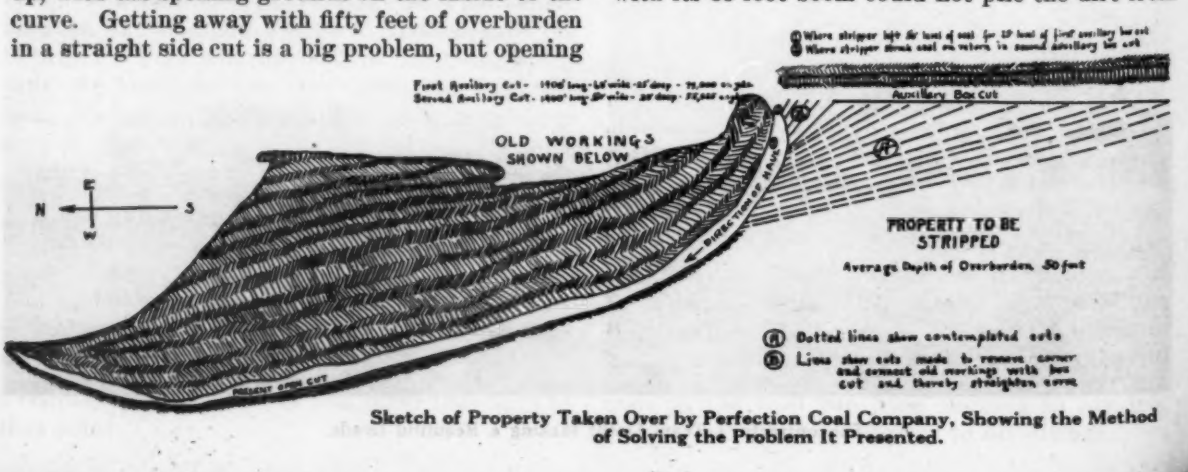
Excavation Practically Complete

Grading has been about completed at the time this article is written, and Reid & Lowe are at work installing the storm sewers and laying yard tracks. It is expected that the entire project will be completed about April 1st. John T. Benton is manager for Reid & Lowe with headquarters at Birmingham. R. W. Powell is superintendent of Yale yards project with W. C. Kay as his assistant.

Solving a Stripping Problem in the Coal Fields

How James McSherry, Manager of the Perfection Coal Company, Du Quoin, Illinois, Dug Himself Out of a Bad Hole

WHEN the Perfection Coal Company took over an old coal mine at Du Quoin, Illinois, Manager James McSherry found himself confronted with a difficult problem. The old workings had shaped into a curve almost at right angles to the newly acquired acreage to be opened up, with the spoiling grounds on the inside of the curve. Getting away with fifty feet of overburden in a straight side cut is a big problem, but opening a box cut in ground this deep, cutting on the large diameter of the curve, and spoiling on the small diameter of the curve, is indeed a difficult proposition. It was obviously impossible to continue operations along the lines of the old pit to develop the new area because even their Bucyrus 225-B with its 85-foot boom could not pile the dirt from


Auxiliary Box Cut
OLD WORKINGS SHOWN BELOW
N
S
E
W
PROPERTY TO BE STRIPPED
Average Depth of Overburden 50 feet
(A) Dotted lines show contemplated cuts
(B) Lines show cuts made to remove corner and connect old workings with box cut and thereby straighten curve

Sketch of Property Taken Over by Perfection Coal Company, Showing the Method of Solving the Problem It Presented.

Turning the Corner. Coal Loading, Stripping and Pulling Back the Cast with the Dragline.

the fifty-foot bank high enough in the spoiling area limited by the curve of the cuts.

As you might know from the name, James McSherry, was not stumped, though it did look like a pretty tough proposition to handle at any reasonable costs. He scratched his head, puzzled a bit, and then came through with this solution which has worked out very successfully.

Box Cut Made Along East Side of Property.

How McSherry Saved the Day

He worked the stripping shovel to the south end of the old workings and when he commenced to get pinched for spoiling ground on account of the curve he climbed up on a seven per cent grade to a twenty-five-foot level. Then he turned the shovel due south to open up a box cut along the east side of the new property to be stripped. This first auxiliary cut was 1400 feet long and twenty-five feet deep, with an average width of sixty feet, and contained approximately 77,000 cubic yards. His Monighan dragline followed on top of the bank, pulling back the spoil from this first cut, and piled it back at a 180-degree angle. The Bucyrus 225-B turned at the south line, dug down another twenty feet, and came back through the box cut at a depth of 45 feet, leaving five feet of shale on top of the coal. The Monighan followed along, climbing up on the second cut, and spoiling the dirt at an angle of ninety degrees to the north. About 300 feet from the corner of the old workings the Bucyrus dropped cut down the other five feet to the level of the coal, stripping clean to the point where it had left the coal strata on the first trip. A Bucyrus 35-B then loaded out this coal.

Cutting the Corner Off

As soon as this operation opened the spoiling ground, the stripping shovel cut the corner off where the old workings joined the auxiliary cut, spoiling at 180 degrees or behind itself. The coal exposed in this short cut was taken out, and the

This Gives Some Idea of the Depth of Overburden. Only the Top of the A-Frame of the Big Bucyrus 225-B Is Visible. The Gentleman in the White Sweater Is Mr. McSherry.

big shovel returned with another cut a little longer than the first. This procedure is being continued, each cut being longer than the preceding one, and more spoiling area being available as the auxiliary cut on the end adds to the spoiling ground. Each cut is made narrow toward the old workings and widened to maximum digging range toward the new box cut. Instead of spoiling on an inside curve, Mr. McSherry has planned his operation so he is now spoiling on an outside curve.

Sewer for Mayfield Heights, Ohio

Janashak & Callow Construction Company Averages 125 Lineal Feet Per Day in Blasted Rock

Stripping Off the Clay, Surplus Dirt Loaded Direct.

JANASHAK & CALLOW recently completed a tough sewer job for Cuyahoga County, Ohio, in exceptional time, considering the material encountered. The sewer is on Sunset Drive, Village of Mayfield Heights, and consists of 3900 lineal feet of 8-inch to 27-inch pipe.

A Bucyrus 31-B sewer steam shovel was used for excavation, while an Austin dragline handled the backfill. The Bucyrus moved over the trench on mats 22 feet long, which were built of five 10 by 12-inch timbers laid on edge and bolted together. The two outside timbers were of elm, and the three center ones of fir.

Excavation Averaged 40 Per Cent Rock

Completed Trench Ready for Sewer Pipe.

In places the material to be excavated ran as high as 80 per cent rock and the average for the entire job was 40 per cent. For about 500 lineal feet the rock consisted of flint from 8 to 14 inches thick overlaying shale under a cover of 5 to 8 feet of clay. The balance was sandstone with a clay cover of 4 feet, gradually deepening until the rock strata dropped below the bottom of the sewer trench.

Two Cuts Necessary

This rock formation made two cuts necessary, the first being a stripping cut to clean the rock for shooting. While digging, the surplus material

Back Filling with the Austin. S. Janashak in the Foreground, Joseph Saukemik Operating.

was loaded directly into a ¾-ton White Truck, and hauled to adjacent lots where it was used as fill. When hauling was heavy a two-ton caterpillar tractor with wagon trailer was used in addition to the truck.

As the rock was exposed it was drilled with Ingersoll-Rand jackhammer drills operated from a Schramm portable compressor. Holes four feet deep were found to work to best advantage, and

these were spaced from three to four feet apart. For four-foot holes three to three and one-half sticks (one-half pound size) of 40 per cent Trojan powder were used. Four or five holes were shot at one time with electric exploders.

After blasting, the 31-B returned over the cut

Picking Up Mats and Dragging Around to Place. T. L. Callow at the Levers.

and dug out the rock, after which the sewer was laid and the Austin followed to make the backfill.

Excavation Finished in 32 Days

Messrs. Janashak & Callow report their Bucyrus worked very successfully and completed the excavation in only 32 working days. The trench was completed faster than material could be obtained, and 53 days were required to finish the job, including backfilling and cleaning up surplus dirt.

Mr. Janashak acted as superintendent while Mr. Callow operated the shovel.

Difficulty Encountered in Removing Old Concrete Piles

Thomas M. Madden Company, Excavating for 25-Story Apartment in Chicago, Find 21-Year-Old Piling Hard to Pull

Some very interesting facts have been brought out in connection with the construction of 1500

Pulling the Old Piles After They Had Been Loosened by Jetting. A Row of the Old Piles Are Shown at the Right.

Lake Shore Drive, a new 25-story apartment building in Chicago, Illinois.

In the winter of 1906, the late Victor P. Lawson built a brick and stone residence and garage on this site. The buildings were very solidly constructed, and as a foundation Raymond concrete piles were used. A total of 568 piles averaging 15 feet 8 inches in length were used on the site, and as the soil in this locality is sand the piles were jetted as well as driven.

Due to the careful workmanship and the excellent materials used in the erection of the old residence, a great deal of difficulty was experienced in wrecking it. After the wrecking was completed, excavation of 17,000 cubic yards of dirt, 200 yards of reinforced concrete and 425 concrete piles was started by Thos. M. Madden Company with an Erie and two Thew steam shovels. All went well until they encountered the piles. It was necessary to remove the concrete piles completely, in order to drive the piles for the new building. However, it was found to be impossible to pull these old piles with the steam shovels, nor could they be removed by excavating below their points because

A Pile of the Concrete Piles After Removal.

this would have necessitated digging from 12 feet to 15 feet below ground water level.

After numerous attempts to remove the concrete piles, the Turner Construction Company, who have the general contract for the new building, decided to try a water jet to loosen the soil around the piles. This arrangement solved the problem, and after the concrete foundations were removed very little difficulty was experienced in jetting around the piles and lifting them out one by one with the steam shovels.

Considering the length of time that these cast-in-place concrete piles were in the ground, the steel shells were found to be in remarkably good condition. The points of all of the piles were well below the ground water line but the heads of the piles were in dry ground. The concrete in all cases was found to be in good condition.

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The Business Situation

The stock market is no longer looked upon as the infallible business indicator that it was a few years ago. Nevertheless, as this is written the stock market holds the center of the stage. For the past several weeks a remarkably large number of shares have changed hands every day, and the prices have continuously climbed — even when all the old timers said that the top had been reached.

There was plenty of money available and industry was only using a comparatively small amount, apparently, therefore, first the habitual speculator and then the general public went in to the market. At last the top seems to have been actually reached and a drop — sudden or gradual — seems in order during the next few weeks.

Such a recession of the stock market will not be a bad sign. There is little doubt but that there is a very unusual amount of speculation on the market today, and in the opinion of many it has reached the point where there is danger of a sudden drop and heavy losses to the public who have gone into the market at too high a level. Gradual recession would not be serious, but a sudden one might affect business in general for, after all, prosperity rests in the final analysis on the amount of money "John Smith" has in his pocket.

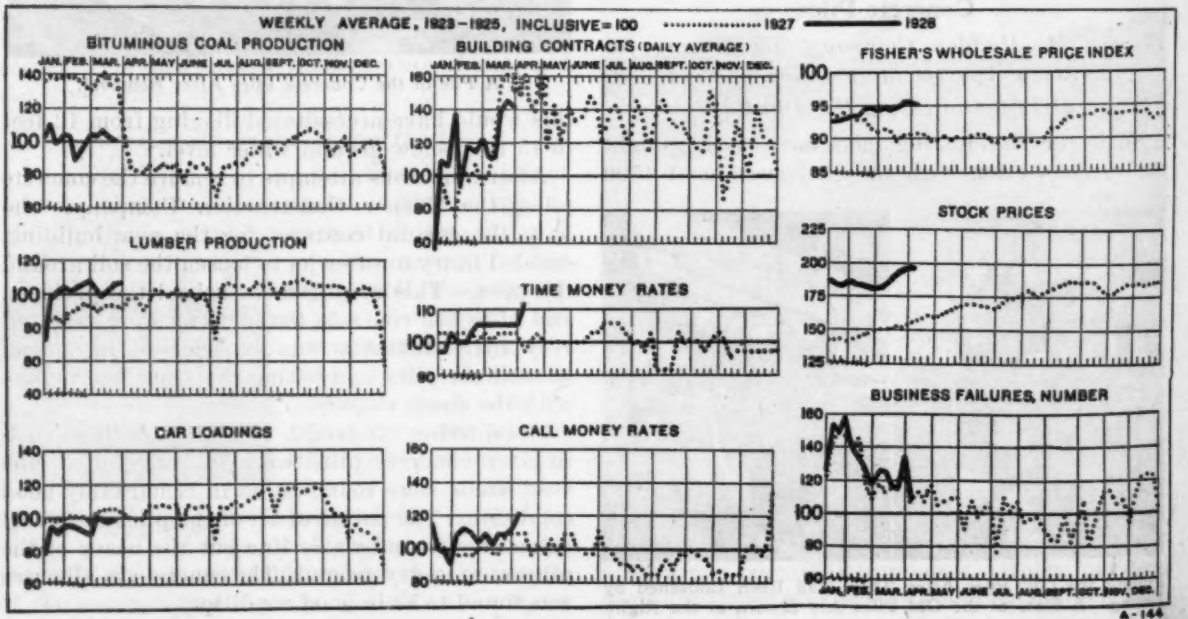
Therefore, the signs of gradual recession on the stock market are not necessarily danger signals. Money is stiffening and it is probably a good thing. It is reported that the Federal Reserve Banks are selling government securities to help control the credit situation by reducing the funds available for loaning.

Three major industries seem to be taking the lead in the present increase in volume of business. Each of these — the steel, automobile and construction industry — is enjoying a good volume at the present time.

The steel trade is operating at about eighty-five per cent capacity. This is a high figure if the small inventories being carried by the steel-consuming industries is taken into account. Furthermore, production promises to round out the first quarter somewhat higher than a year ago.

The Detroit Employers' Association in their report of March 20th indicate a gain of seven per cent over a year ago in spite of the fact that Ford is making a comparatively low output.

Construction contracts to the amount of $592,567,000 were awarded last month in the 37 states east of the Rocky Mountains, according to F. W. Dodge Corporation. The above figure covers about 91 per cent of the total construction of the country. Last month's total was the highest monthly contract total on record for the 37 states



since June 1927. There was an increase of 27 per cent over the total for February of this year, but there was a drop of five per cent from the March 1927 record.

Last month's record brought the total amount of new construction started since the first of this year in these states up to $1,485,067,000, being an increase of 6 per cent over the amount started in the first quarter of last year. In addition to being ahead of last year's first quarter record it was the highest first quarter recorded for the 37 states.

Analysis of the March contract total showed the following important classes of work: $275,191,600, or 46 per cent of all construction, for residential buildings; $110,338,200, or 19 per cent, for public works and utilities; $73,075,300, or 12 per cent, for commercial buildings; and $33,881,000 or 6 per cent, for educational projects.

New work contemplated during the past month amounted to $884,609,100. This figure was 7 per cent less than the amount reported in the preceding month, and was 26 per cent under the contemplated record for March of last year.

The charts on the opposite page will be found worth while studying. Bituminous coal production will be seen to have dropped sharply a year ago. This was, of course, the date of the beginning of the present strike. The output for the first quarter this year has been approximately the same as the average from 1922 to 1923.

Lumber production is running above both the three years' average and last year's figure.

Car loadings are a little under the figure for a year ago, although not seriously so.

The chart for building construction shows, as mentioned above, that the rate of building on the first of April was somewhat under a year ago, although the total for the first quarter was above that for the same period of 1927.

Money rates show decided stiffening — this is not serious for business and should tend to reduce the amount of speculation on the stock exchange. Call money rates show the same tendency to rise and will, of course, have the same effect upon the stock market.

Stock prices which have been very much above the prices for a year ago show a decided rise for the month of March. Notice how the rise has almost been steady since January 1927.

Business failures are practically the same as a year ago.

Motorists Travel More Than 150,000,000,000 Miles in 1927

How would you like to be assigned the task of driving a motor vehicle around the world sixty-one million times? Driving constantly at an average speed of 30 miles per hour it would take you 571,000 years. But that is exactly what you would be forced to do could you undertake to duplicate the travel of motorists of the United States during the year 1927.

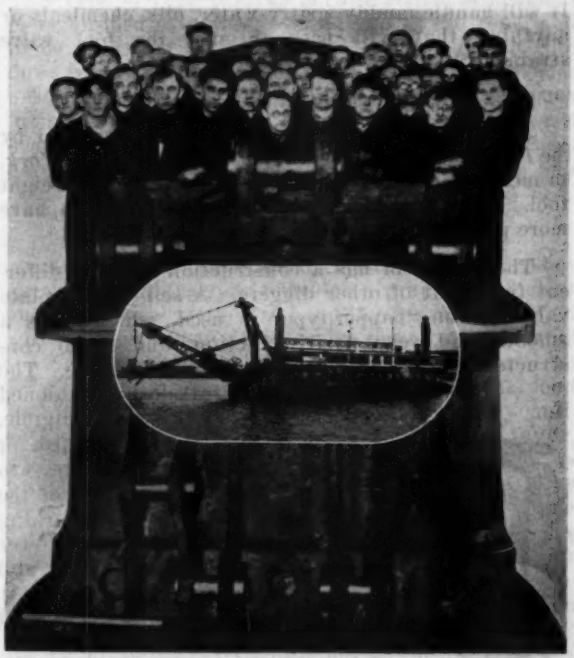
These interesting figures were compiled by the American Road Builders' Association following the association's report of gasoline consumption during 1927. Motorists consumed 11,563,490,000 gallons of gasoline, which at an average of 13 miles to the gallon would mean a total travelled distance of more than one hundred fifty billion (150,000,000,000) miles.

The average consumption per motor vehicle during 1927 was 550 gallons, and the average distance travelled estimated at 7,150 miles, on the ultra-conservative basis of 13 miles to the gallon.

The American Road Builders Association accredits much of the increased motor travel to the existence of good roads. "These roads," it is claimed, "save from three to four cents for every mile travelled. If all the roads of the United States were improved to a degree proportionate to the amount of traffic they carry, the annual saving in transportation costs would exceed four billion dollars."

Some Dipper!

Here is the world's largest excavating dipper, filled — or rather partly filled — with some of the men who worked on its building. This dipper, built by Bucyrus-Erie Company, has a capacity of sixteen cubic yards, struck measure, and is for the Bucyrus dredge "Crest" shown in the insert, the largest Diesel-



electric dredge in the world, owned by the Great Lakes Dredge and Dock Company and now working in and around New York harbor.

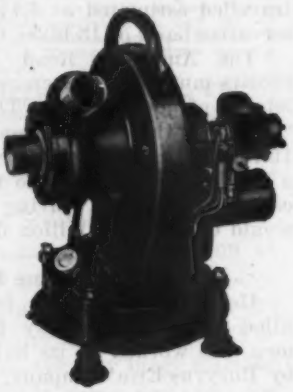
The dipper is of interest not only because of its size. It has only two parts cast from special steel and there is not a rivet in it.

Divided horizontally, the upper part — the part that digs — can be renewed when necessary. The digging strains, owing to this method of construction, are transmitted through solid steel rather than from one unit to another.

DEVICES YOU OUGHT TO KNOW ABOUT

Homelite Corporation Announce New Portable Pump

A new portable centrifugal pumping unit weighing 95 pounds with a capacity of 7500 gallons per hour is being marketed through dealers by the *Homelite Corporation, Port Chester, New York.* This unit, the Homelite Portable Centrifugal Pump, consists of a centrifugal pump direct connected to a 1½ h.p. single-cylinder, air-cooled motor operating on gasoline or kerosene.



Pump and engine are mounted on the same base, which also acts as a fuel tank, holding one gallon—sufficient to operate the engine for 4 or 5 hours.

Pump suction and discharge are 2 inches in diameter. The lift of the pump is 20 feet; head, 45 feet. It will handle muddy, gritty water, oils, chemicals or anything that will pass through the foot valve strainer.

Pneumatic Digger Replaces Labor

A new Pneumatic Digger has been developed by the *Ingersoll-Rand Company, 11 Broadway, New York,* to meet the demand for a more powerful light-weight tool. This new digger, size 73, is claimed to have more power than any other tool of equal weight.

This new tool has a construction entirely different from that of other diggers. A self-seating plate valve of the "flapper-type" is used, which gives a smooth and very positive action, and is so constructed that it actually seats tighter with use. The light-weight, small travel and cushioned action of the valve make wear negligible.

The tool-retaining device is also of a new construction, designed: first to completely enclose the lower end of the barrel, thus keeping dirt from working up into it; second, to support the lower portion of the shank of the blade; and third, to make possible easy assembly and removal of the rubber buffer and blade.

Two types of handles are furnished: an open-type outside trigger handle which is standard or a closed-type inside trigger handle. The handle is bolted to the barrel giving a very secure construction and one which can be easily disassembled and assembled.

This new tool has been found particularly suited for tunnelling in clay and for similar work. The extra power combined with ease of handling make possible an increased rate of work.

New 10-Yard Bottom Dump Wagon

The Creeper Wheel Co., Reading, Pennsylvania, have recently placed on the market a fifteen-ton Creeper Wheel to be used in connection with a ten-yard capacity, bottom dump, dirt wagon. This ten-yard capacity wagon is manufactured by the *Biehl Iron Works of Reading, Pennsylvania* and is claimed to be the largest of its kind on the market today.

Creeper Wheels are manufactured in various sizes, and are used to replace the round-type wheel in increasing numbers. They may be added to any wagon or tractor equipment for hauling of all kinds, their particular advantage being that they will creep over the top of earth without digging in, so that hauling can continue regardless of weather or soil conditions. It is claimed that Creeper Wheels are

practically non-friction and non-clogging, making it possible to carry extremely heavy loads with quite a saving in tractor power. The manufacturers say there is nothing on the market today to equal their simplicity and durability.

Creeper Wheels need no roads—their job is to make their own road as they creep along, and they do this without cutting into the earth. In fact, after they have passed over the earth several times, you have a road where previously none existed.

Four New Novo Rollr Engines

The two new single-cylinder Novo Rollr Engines will be, in appearance, similar to the well-known line of two-cylinder engines. Obviously, they will be smaller, i. e., the cylinder block will be shorter than the two-cylinder Rollr engines. At present, it is planned to manufacture two sizes:

3 x 4	1½	3 H. P.
3 3/16 x 4	2	4 H. P.

At the same time, Novo will also bring out two new four-cylinder engines. These will also be known as Rollr Engines, since in construction details they closely resemble the well-known line of two-cylinder Rollr engines. In fact, they are "double-up" two's. The two sizes are as follows:

FFU	3 x 4	12 H. P.
HHU	3 3/16 x 4	16 H. P.

These new Rollr engines incorporate advanced practices such as are found in no other four-cylinder power units.

A Shifter for Narrow Gauge Track

Those who have narrow gauge track to shift and raise will welcome the announcement of the *Nordberg Manufacturing Company, Milwaukee, Wisconsin,* of a new Model "O" Track Shifter, a machine that can now be procured for use on track as narrow as 36-inch gauge. This company for the past three years has been building a standard gauge machine. It is the only piece of equipment of its kind on the market, and after it became generally known there were many demands for a similar machine suitable for narrow gauge work.

The principle of operation of the Model "O" is the same as that of the standard machine. Due to a less severe service and smaller dimensions, it has been possible to simplify the controls and decrease the weight in comparison with the larger machine.

It is powered by a 4-cylinder, 15 horse power, fully-enclosed gasoline unit. There are two propelling speeds in either direction—a low at 4½ miles per hour and a high of 13. The worm-driven lifting speed has a lifting capacity of 42,000 pounds at a maximum lifting speed of 15 feet per minute.

Power for the various functions of the machine is supplied through friction disc clutches. Any clutch to be in service must be held in by the operator — that is, when the clutch is released, it is automatically disengaged. This arrangement permits a much faster performance, as it enables the securing of greater accuracy in the various movements of the machine when shifting and raising track.

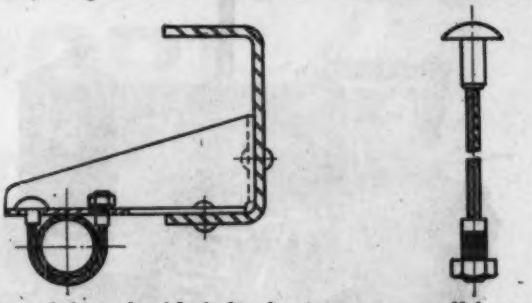
While this machine is principally for shifting work, it can also be used for raising track by lifting one rail at a time. This dispenses with the track jacks, and greatly speeds up any track-raising job.

At quarries, open-pit mines, construction jobs, or any place where narrow gauge track must be shifted and raised on waste dumps and fills, this new Model "O" Track Shifter will equal in every way the performance of its larger companion machine, the Model "N." The operator and several laborers will replace the usual track gang, resulting in saving labor and faster work. Shifting and raising track by hand is sometimes a difficult task, especially when working in mud, sand, cinders, slag, or other loose material. Such conditions are not a hindrance to the track machine.

American Cable Company Develops a Flexible Bolt

Through the development of the preformed type of wire rope which makes possible the attachment of fittings by the processing method that compels the fitting to become an integral part of the rope, the *American Cable Company* has recently perfected the Tru-Lay — Tru-Loc flexible bolt illustrated by the accompanying line drawing.

These new bolts may be used in countless places in and around the plant or mill or in any place where rigid U-bolts are impracticable. They are finding ready acceptance as auxiliary hangers for power shafts, suspension brackets for overhead steam or



water piping, shackle bolts for temporary wall boxes, tanks, etc., for scaffolding and tackle, on various parts of machinery, and in other places where semi-flexible connections are necessary.

The principle on which the new flexible bolt rests is the preformed type of wire rope. Preforming the wires and strands to the exact helical shape they must assume in the completed rope, results in a cable that does not require seizing but may be cut like a rod. This type of rope permits a close-fitting attachment to be slipped over the unseized end of the rope, and to be processed so that the steel of the fitting cold flows into the interstices of the rope and thus becomes practically an integral part thereof. Naturally such fittings can be threaded for a nut or capped for a head. The flexible bolt which has resulted from these developments is available in varying lengths and holds promise for universal acceptance.

A New Fresno Tractor Hitch

A new Fresno Tractor Hitch which fits all fresnos as well as all tractors provides a practical, efficient and economical method of handling fresno excavation with tractor power. The device permits the tractor operator to dump the load by simply pulling a lever. The hitch is made in one size only, which fits either the four-foot or five-foot horse-drawn fresno without changing or adjusting. With this device the fresno loads automatically and no manual labor is required in filling or getting the scraper out of the ground with its load. The United States Fresno Tractor is manufactured by the *United States Factories Company, Sidney, Ohio.*

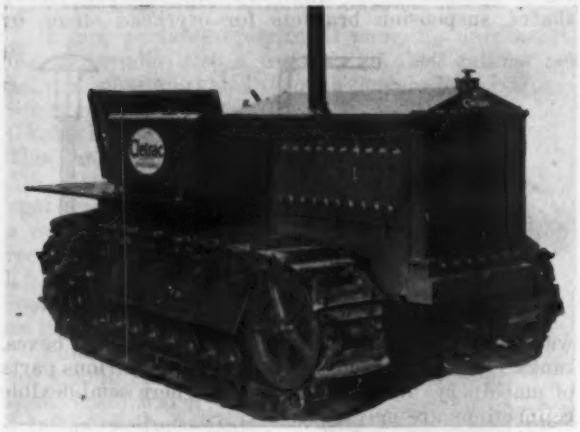
On his tour of the district, a school inspector came before a class of girls. He wrote upon the blackboard, "LXXX." Then, peering over the rims of his spectacles at a good-looking girl in the first row, he said:

"I'd like you to tell me what that means."

"Love and kisses," the girl replied. — *Mary R. Wismer, Phillipsburg, N. J., in the Yellow Strand.*

New 40 Horse Power Cletrac

The Cleveland Tractor Company, Cleveland, Ohio, manufacturers of Cletrac Crawler Tractors, announce the Cletrac "40," designed to round out their tractor equipment to embrace the entire scope of power requirements for building and maintaining roads. In



this latest model is ample power capacity, positive traction, speed, "one shot" oiling, coupled with fuel and oil economy.

The motor is a six-cylinder, four-cycle, valve-in-the-head type, water-cooled, with a 4½-inch bore and 5-inch stroke. It is equipped with force feed lubrications, Delco Remy starting, lighting and ignition, Kingston carburetor, Pomona air clarifier, and many other special features. 40 horse power is developed at the drawbar, 55 horse power at the power pulley. Cletracs are also made in 20, 30 and 100 sizes.

From THE MAIL BAG

Chicago, Ill., April 17, 1928.

Editor Excavating Engineer,
South Milwaukee, Wisconsin.

I like very much your article in the April issue on the Welland Canal because it has some absolute data, profile, maps, etc. So much of your stuff is simply photographs, which can tell anything or nothing. Real dirt movers want absolute data, maps, plans, schemes of arrangement with dimensions on them. It makes all the difference in the world whether you are running a "Pictorial" or a professional.

Yours with best wishes,

H. H. EDGERTON,
Office of Chief Engineer,
Chicago & Great Western Railway Co.

Mr. Edgerton's criticism we believe is an excellent one. ***The Excavating Engineer*** is written for "real dirt movers" everywhere and it is our aim to make the magazine of the greatest possible value to the fraternity of the field of excavation.

Criticisms and comments of the sort offered by Mr. Edgerton are deeply appreciated and will be welcomed at any time.

In our future issues we will endeavor to give more specific and useful material along the lines suggested by Mr. Edgerton.

SHOTS FROM THE FIRING LINE

Buffalo and Vicinity

BY D. E. WHITE

"Bob" Holmes, Superintendent for the Wyoming County Highway Department, Warsaw, New York, is making the dirt fly with the two Bucyrus-Erie Type "A" caterpillar machines. Homer Cook, operator, and "Hank," his fireman, are in love with the "A" they are handling.

Dropped in to see Mike Ripton of the Ripton Crushed Stone Company, Rochester, New York, the other day. Our friend Dave Ripton was out digging up some new work. They are looking forward to a busy season this year.

Chas. Rossow & Sons, Buffalo, New York, are handling a big business these days with their fleet of three Bucyrus-Erie Gas + Air machines.

Canada

Montreal and Vicinity

BY J. M. WARD

The Hydro Power Development of the Power Corporation of Canada is being proceeded with at Back River, Montreal. P. Lyall & Sons are the general contractors, and they have sublet a large portion of the work to Gorman & Peckham. Weather conditions have held back progress somewhat so far, but it is expected that within the next two or three weeks things will be well under way.

The Kennedy Construction Company of Montreal are doing a wharf job for the Canada Steamship Lines at the Soo. We had the pleasure of meeting our old friend, Alex Finlayson, who has been at home in Nova Scotia all winter. He is now in Montreal looking over the construction situation.

Charlie Billy of Montreal has undertaken a couple of road jobs for the Ontario Government.

Dan Verochio is keeping his B-2 Erie busy on excavation work around the city.

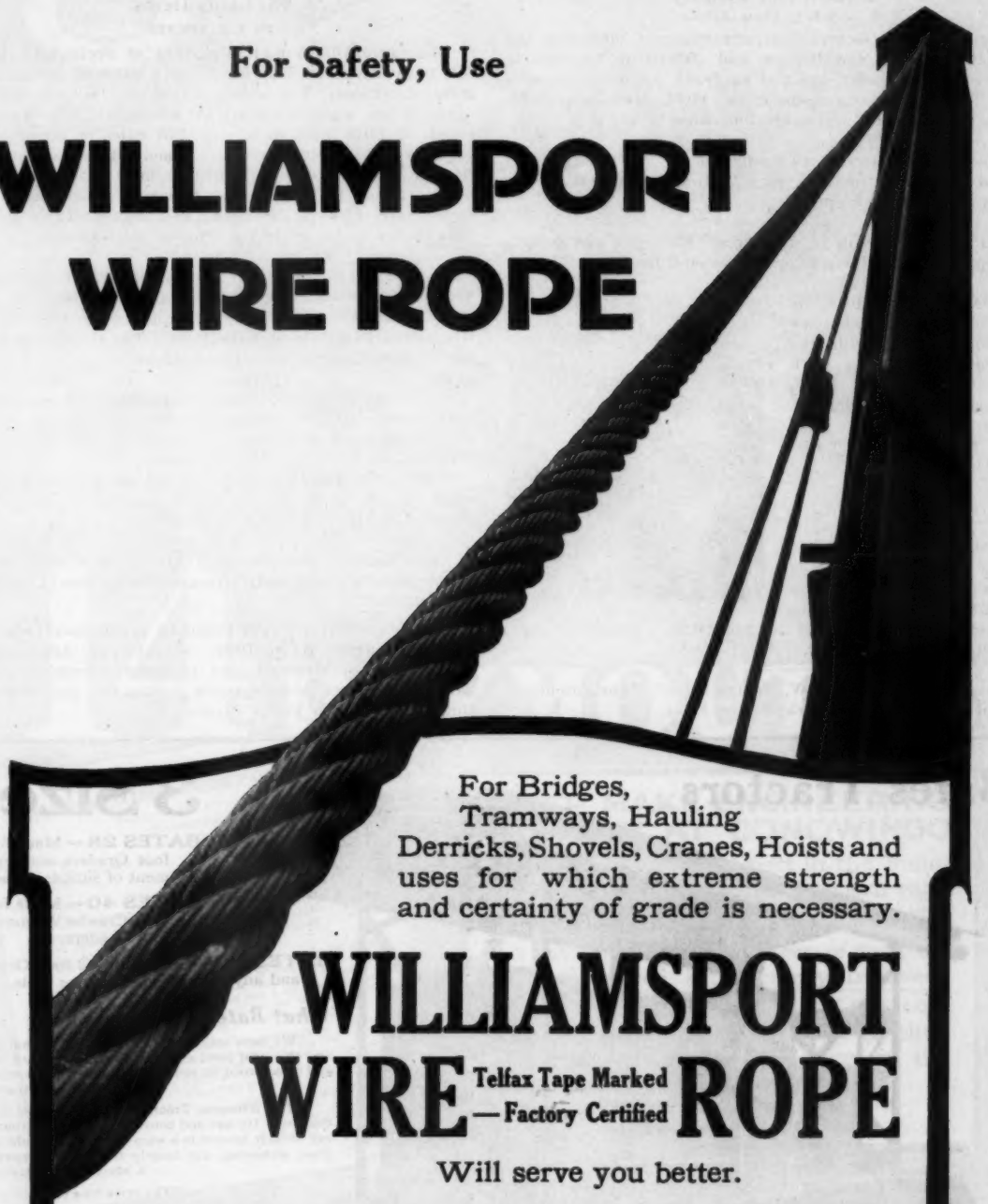
L. A. Ott has both of his Bucyrus 20-B shovels in active operation right along.

It is expected that the new railway around Lake St. John will be further extended this coming summer.

The Quebec Government passed the bill for the Beauharnois Light & Power Company construction of canal. The matter is now before the Dominion Government in connection with the water rights. As soon as this is settled the construction will be proceeded with.

For Safety, Use

WILLIAMSPORT WIRE ROPE



For Bridges, Tramways, Hauling Derricks, Shovels, Cranes, Hoists and uses for which extreme strength and certainty of grade is necessary.

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Use Madesco Tackle Blocks—They Stand the Gaff.

In writing to Williamsport Wire Rope Co. please use post card bound in the center of this number.

SHOTS FROM THE FIRING LINE — Continued

Detroit and Vicinity

BY P. M. RICHARDS

The Greenville Gravel Company who are operating the C. N. Ray pits at New Hudson and Oxford, in addition to their Green Oak plant, are getting ready for a big season's run. They are also reopening the Ovid, Michigan, plant, having moved their Bucyrus 50-B machine to this pit.

The Standard Gravel Company pit at New Hudson has started production for this year. Their Bucyrus 30-B electric is now working in the pit.

J. E. Snyder & Sons of Ann Arbor, Michigan, are making good progress with their Bucyrus-Erie B-2 machine.

H. A. (Pink) Morse is using the Wayne County Bucyrus 41-B shown in the illustration on bridge work south of Michigan Road. This bridge is one of the new county bridges over the River Rouge, and is on the new Air Port Drive.

At a drain letting at Yale, Michigan, on April 10th, the bids on the larger of two sections ranged from a low bid of 76,968.30 to $226,428.80 and on the smaller section from $8,890.00 to $40,500.00. Evidently some wanted it and some didn't.

Heysteck & Gohr, 441 W. Tobias Street, Flint, Michigan, are operating a Bucyrus-Erie B-2 at Flint.

G. L. La Boiteaux of Toledo is working one of his Bucyrus-Erie B-2 machines on road work in Ohio.

St. Louis Items

BY A. J. KOENIG

The State Division of Highways at Springfield, Illinois, will receive bids on May 9th for 111 miles of paving and 71 miles of grading. The letting will bring the total state road work, either under contract or for which bids have been asked, of 1,048 miles of paving, 275 miles of heavy grading and 276 large bridge sections. Among the bids which have been awarded by the department recently is for the approach to the Illinois River bridge at Florence, consisting of a concrete trestle 1,200 feet in length and with a 24-foot roadway. This contract was let to the Illinois Steel Bridge Co.

Authority to construct seven miles of railroad in Arkansas between Stoffles Landing and Wilson, Arkansas, was sought from the Interstate Commerce Commission by the Mississippi River Western Railway. The corporation, a new one, expects to serve timber operations.

E. W. Holterman of Omaha, Nebraska, was awarded contract by the Missouri State Highway Commission for grading sixteen miles of roadway on Highway No. 71.

The W. A. Ross Construction Co. of Kansas City, Missouri, landed a nice highway contract in Marion County, Missouri, on their bid of $117,569.

Dave Keating, 6014 Pershing Avenue, St. Louis, Missouri, has a machine outfit and 15 teams that he would like to put to work.

The White River Power Company proposes to build a 226-foot dam on the White River, near Cotter, Arkansas, with backwater into Missouri, and to build a number of other dams and power houses below Cotter on the White and Buffalo and North Forks Rivers.

Bates Tractors

BATES 70

3 Sizes

BATES 28 — Made for 8-foot Graders and equipment of similar capacity.

BATES 40 — Made for 7-yard Crawler Wagons, 10-foot Graders, etc.

BATES 70 — Made for 12-foot Graders and any of the largest tractor tools.

What Bates Customers Say:

"We have used a Bates Tractor for several years and this year have given it exceedingly hard usage and it has stood up remarkably under the *overload*."
— An Illinois Contractor.

"The strongest Tractor for its size used in this country. Its size and construction is such that you can turn it around in a very narrow road, which is a great advantage due largely to the long crawlers."
— A Maryland Contractor.

"The extra long crawlers give it a great advantage over the others."
— A Tennessee Contractor.

"There has been a minimum of repairs, and the gasoline and oil consumption is most satisfactory."

Write for New Catalog.

Bates Manufacturing Company
JOLIET, ILL., U. S. A.
Established 1883

Pioneers in the Tractor Industry

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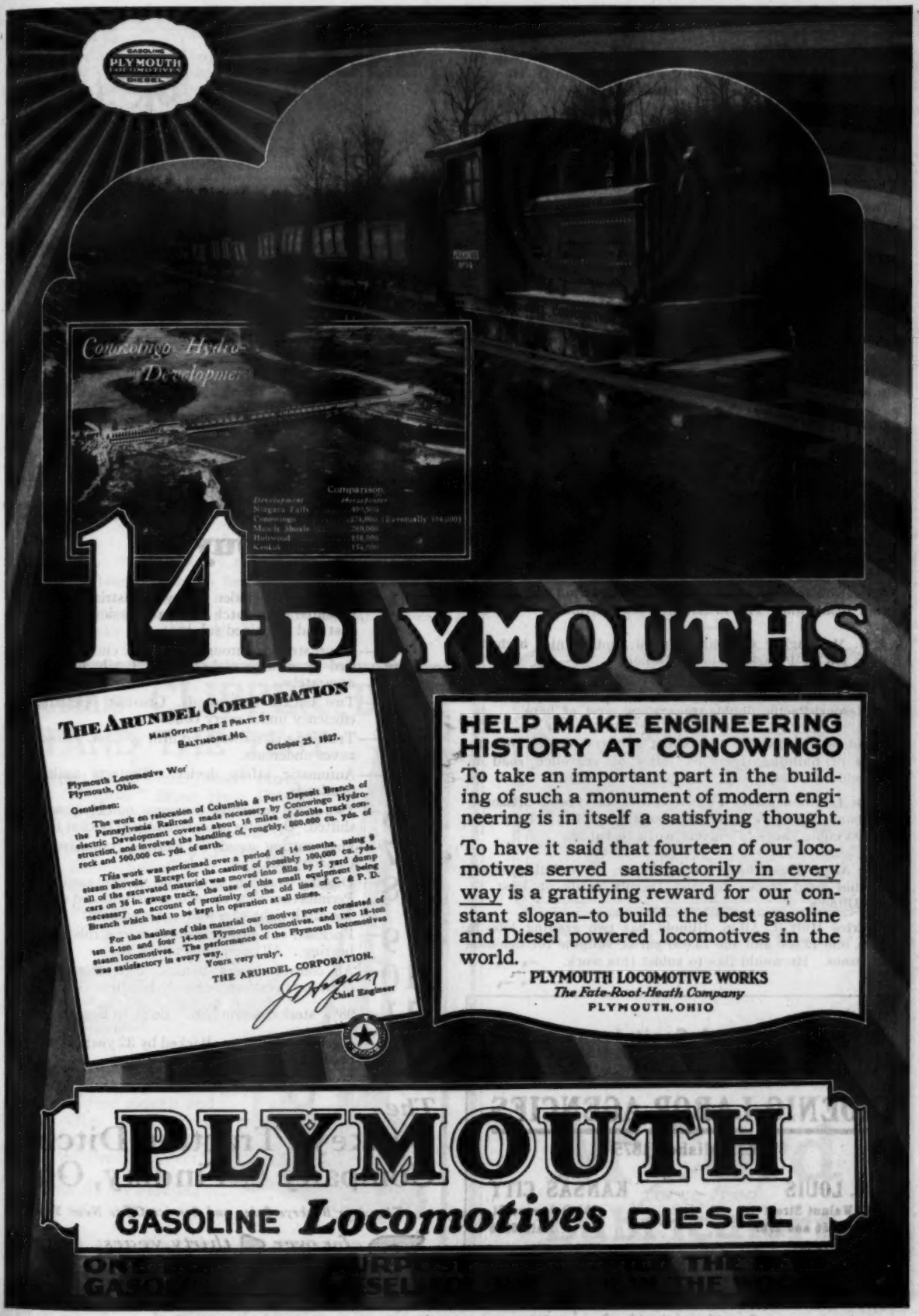
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14 PLYMOUTHS
THE ARUNDEL CORPORATION
MAIN OFFICE: PIER 2 PRATT ST
BALTIMORE, MD.
October 25, 1927.
Plymouth Locomotive Wor
Plymouth, Ohio.
Gentlemen:
The work on relocation of Columbia & Port Deposit Branch of the Pennsylvania Railroad made necessary by Conowingo Hydro-electric Development covered about 16 miles of double track construction, and involved the handling of, roughly, 800,000 cu. yds. of rock and 500,000 cu. yds. of earth.
This work was performed over a period of 14 months, using 9 steam shovels. Except for the casting of possibly 100,000 cu. yds. all of the excavated material was moved into fills by 5 yard dump cars on 36 in. gauge track, the use of this small equipment being necessary on account of proximity of the old line of C. & P. D. Branch which had to be kept in operation at all times.
For the hauling of this material our motive power consisted of ten 8-ton and four 14-ton Plymouth locomotives, and two 18-ton steam locomotives. The performance of the Plymouth locomotives was satisfactory in every way.
Yours very truly,
THE ARUNDEL CORPORATION.
Chief Engineer
HELP MAKE ENGINEERING HISTORY AT CONOWINGO
To take an important part in the building of such a monument of modern engineering is in itself a satisfying thought.
To have it said that fourteen of our locomotives served satisfactorily in every way is a gratifying reward for our constant slogan—to build the best gasoline and Diesel powered locomotives in the world.
PLYMOUTH LOCOMOTIVE WORKS
The Fate-Root-Heath Company
PLYMOUTH, OHIO
PLYMOUTH
GASOLINE *Locomotives* DIESEL

In writing to The Fate-Root-Heath Company please use post card bound in the center of this number.

SHOTS FROM THE FIRING LINE — Continued

Dan C. Crane after an absence of eight years is back in the contracting game and gets off with a good start. He was awarded a contract by the Frisco Railroad for about 36 miles of bank widening in Arkansas and Mississippi.

J. B. Dorris, 505 West 10th Street, Kansas City, Missouri, has a machine outfit and fifteen teams idle. He is looking for a job for same.

The Madison Construction Co. of Edwardsville, Illinois, was awarded contract for approximately one-half million dollars of highway work in Illinois.

The Board of Aldermen at St. Louis, Missouri, appropriated $970,000 for a relief sewer. Bids will be asked for soon.

The Riley Contracting Company with an offer of $37,316 was the low bider for the construction of a sewer in Vandeventer Avenue from Easton to Enright Avenues, in St. Louis. It will join the Mill Creek Valley sewer. The engineer's estimate on this work was $45,000.

Cameron-Joyce & Co. were awarded contracts for Route 29, Section 141, and Route 49, Section 142, state highway, pavements, in Illinois. Their bid was $434,335.

The Beaver, Meade & Englewood Corporation which now operates a short line of railroad in Oklahoma, plan the construction of 59 miles of new railroad from Hooker to Keyes. Authorization has been granted for same by the Interstate Commerce Commission.

Harrelson-Johnson Co. were awarded contract for grading Section 103a, Route 143, in Saline County, Illinois.

J. J. McCaughey Company landed another nice highway grading job in Pulaski County, Illinois.

M. L. Windham has a steam shovel outfit at work on the new Missouri-Pacific double-track work west of here.

Brookfield, Missouri, has voted $160,000 bonds for the purpose of building thirty-six miles of gravelled road in Brookfield township.

John L. Simmons Construction Co., La Plata, Missouri, have about 120,000 yards of earth work to sublet. They also have 700 cubic yards of culvert work to sublet.

The Alton & Southern Railroad plan the building of six additional yard tracks for the Davids yards at East St. Louis, Illinois.

Charles Mulvill, Alton, Illinois, has two grading jobs in Illinois, one 12,000 and one 75,000 yards, suitable for machine and fresnos. He would like to sublet this work.

Meeting Place of Capital and Labor

THE

KOENIG LABOR AGENCIES

Established 1875

ST. LOUIS
612 Walnut Street
Main 2766 and 2767

KANSAS CITY
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Help of All Kinds Furnished Free

—and 12 *other* reasons why the Buckeye Service Ditcher is a *good* buy!

1—5" x 6¼", 4-cylinder heavy industrial motor, mounted with clutch and transmission on solid cast and machined sub-base.

2—Power steering through Twin Disc clutches carried by dust-proof bearings. Easily handled accurately.

3—Two bucket line speeds. Greatest operating efficiency under every condition.

4—Traction units always on firm ground. Boom never undercuts.

5—Automatic safety device. Protects against overloads.

6—Two-speed reversible conveyor, quickly power-shifted. Operates independently of bucket line.

7—Four cutting speeds by shifting transmission. Capacity 26" wide, 9' deep.

8—Digging traction reversible instantaneously. Permits tunneling under obstructions and starting ditch right at a wall or foundation.

9—Enclosed cut gear transmission controls, ball-bearing. All operations reversible.

10—All control levers banked conveniently at operator's platform. Easily handled.

11—98% steel construction. Built to keep going.

12—A *genuine* Buckeye. Backed by 32 years of successful trench excavator experience.

Price F. O. B. Factory.

The
Buckeye Traction Ditcher Company — Findlay, Ohio

There's a Buckeye Sales and Service Office Near You

for over thirty years **Buckeye**

SHOTS FROM THE FIRING LINE — Continued

R. J. Reid of Reid & Lowe, Birmingham, Alabama, called in to see us. He reports they have finished their work at the Yale yards, Memphis, Tennessee, for the Frisco Railroad. They have two shovels and fifteen teams idle and want work for them.

Among the contracts granted recently by the Illinois State Highway Department were the following: Route 89, Marshall County, Herrick Construction Co.; Route 142, Hamilton County, Watt Construction Co.; Route 88, Stark County, A. P. Munsen; Route 116, Livingston County, Indiana Road Paving Co.; Route 142, Hamilton County, Higgins, Dyer & Co.; Route 92, Adams County, Cameron, Joyce, Smith, Elder Co.; Route 128a, Bond County, Nelson Construction Co.; Route 91, Peoria County, Dyer Construction Co.; Route 130, Cole County, Foulkes Construction Co.; Route 150, Alexander County, C. J. Moritz; Route 89, Lee County, J. J. McCaughey Co.; Route 105, Adams County, Gaines Bros.; Route 88, Bureau County, Burch Construction Co.; Route 89, Lee County, Clinton Brick Works; Route 89, Marshall County, Continental Brick Co.; Route 89, Lee County, R. R. Beard; Route 78, Ja Daviess County, American Paving Co.; Route 121, Edgar County, G. H. Lane; Route 116, Tazewell & Woodford Counties, L. B. Dyer Construction Co.; Route 56, Dupage County, Ferguson Construction Co.; Route 158, Monroe and St. Clair Counties, Kiefner & Griele; Route 160, Madison County, W. F. Sayer; Route 78, Carroll County, Worden-Allen Co.; Route 122, Tazewell and McLean Counties, Henkel Construction Co.

Iowa and Vicinity

BY H. C. EMERY

John Thomson of Omaha has moved his Erie Gas + Air shovel on to a 40,000-yard rock job near Winterset, Iowa. The Gas + Air is performing beautifully and Mr. Thomson expects to make a record on the job.

Loomis "CLIPPER" Drills STAND THE TEST

Satisfied owners everywhere prove that "Clipper" Blast Hole Drills handled by your own men in your own rock strata will give *Low Upkeep Cost, Low Delay Losses, Low Rate Depreciation* with constant production of *Record Footage.*

They will save you money in your blast hole drilling month after month and year after year. Your shovels will not need to wait on the "Clippers".

Write us for detailed information.

THE LOOMIS MACHINE CO.

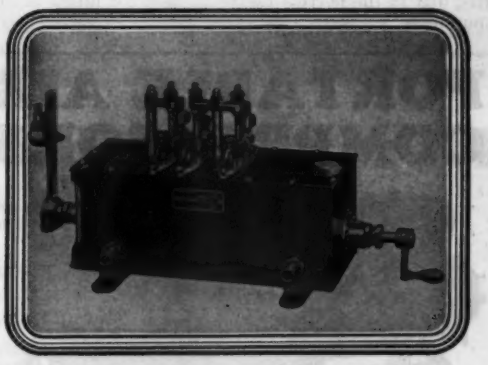
(Established 1842) K Street, Tiffin, Ohio

A McCord Force Feed Lubricator Will Keep Your Shovel on the Job

A McCord force feed lubricator installed on your steam shovel now will insure more continuous operation. Dependable force feed lubrication prevents shutdowns and delays, it gives more hours on the job.

McCord force feed lubricators are used as standard equipment by the largest and best-known steam shovel builders and they will be installed on any shovel at your request.

Put a McCord lubricator on now and be assured of dependable lubrication for the life of your shovel.



McCord Class B. A. Force Feed Lubricator

McCord Radiator & Mfg. Co.

Detroit, Michigan

McCord *force feed* **Lubricators**

SHOTS FROM THE FIRING LINE — Continued

Gund-Graham Company of Freeport, Illinois, are lining up a paving outfit to start work at Aurora as soon as weather will permit. They plan to use their Bucyrus-Erie Gas + Air for street grading and later as a clamshell for unloading material. These people also have a contract to repave several blocks of streets in Freeport.

Charlie Walker is using his Bucyrus D-2 Diesel dragline pictured above on a drainage job near Weaver, Iowa. He says the D-2 is the fastest machine he has ever operated and exceptional yardages are obtained daily.

Ed Hughes has the job of building a four-mile spur for the Rock Island railroad from Williamson, Iowa, to a mine, which is nearing completion. His Erie Gas + Air has given a good account of itself and has stood up fine under the exceptional hard digging and breaking frost during the winter just past.

The Foundation Company is making fine progress on the $27,000,000 power plant being erected by The Insull interests at Powertown near Pekin, Illinois. The Erie Gas + Air is loading dirt in the borrow pit, to be used for filling in around the buildings.

PORTABLE AIR COMPRESSORS

Built in four sizes with displacements of 60, 120, 180 and 240 cubic feet, "SCHRAMM" multi-cylinder engine-driven Compressors cover all requirements of the field.

CONVENIENTLY LOCATED STOCKS and SERVICE

Schramm, Inc.
West Chester, Pa.
Offices and representatives in all important cities.

Schramm

?

Have **YOU** considered the advantage of having a **Power Dipper Trip** on **YOUR** shovel?

The increased output would pay for it in a short time.

Write for information and prices.

BUCYRUS-ERIE COMPANY
SPECIALTY DEPARTMENT
South Milwaukee, Wis., U. S. A.

And now a Shifter for narrow gauge Track!

Announcing a Track Shifter for track of gauges from 36 to 48 inches

No longer is it necessary to shift and raise narrow gauge track by hand. Nordberg now offers a machine suitable for track from 36 to 48-inch gauge.

The remarkable success of the standard gauge machine has resulted in many demands for a similar machine for narrower track. The basic principle of operation is the same as that of the standard gauge machine. With its operator and a few laborers it replaces the ordinary track gang and will shift four times as much track in the same amount of time.

Quarries, open pit mines, contractors, or wherever track is maintained, will find this machine a great time and labor saver over the old time hand methods. Any place where a track shifting gang is required for narrow gauge track this machine soon returns the first cost out of labor savings.

Shift and raise your track by the cheapest possible means — a Nordberg Track Shifter. Write for circular GR-8A describing this new modification.

Nordberg Mfg. Co., Milwaukee, Wis., U. S. A.

THE NORDBERG PATENTED

TRACK SHIFTER

In writing to Nordberg Mfg. Co. please use post card bound in the center of this number.

SHOTS FROM THE FIRING LINE — Continued

Frank Busche of Omaha recently completed a basement job for the Chevrolet Motor Co. at 9th and Capitol Avenue. He used his Bucyrus 20-B on the job and Culley says it is just like taking candy from the proverbial baby to handle the 20-B as compared with several other machines he has been operating while the 20-B has been tied up.

Nevada Notes

Following is the program of the Nevada State Highway Commission, Heroes Memorial Building, Carson City, Nevada, for 1928, total $1,701,038: Churchill County — 7.75 miles from Leetsville to Fallon, widening present roadway, resurfacing and oiling, to cost $42,000; Clark County — 30.14 miles of oiling from Jean to Las Vegas, to cost $50,000; Douglas County — 2 miles from 6.06 miles north of Minden to 8.43 miles north of Minden, work consisting of oiling, to cost $4,000; Esmeralda County — 29.94 miles of new roadway, grading and graveling, from Tonopah to 8 miles west of Millers and from Coaldale to Esmeralda-Mineral County line, bids opened January 25, estimated cost of work $240,000; Elko County — 41 miles from Elko to Halleck and from Elko to Carlin, reconstruction work to cost $120,000; Humboldt County — 17.41 miles of reconstruction work from Humboldt-Lander County line west, to cost $56,000; Lander County — 8.53 miles of reconstruction from west county line to Battle Mountain, to cost $28,000; Lyon County — Constructing Fernley overhead crossing and 5.11 miles of oiling from Washoe-Lyon County line to 2.76 miles east of Fernley, total cost of oiling and overhead crossing $73,000; Mineral County — 31 miles new work Esmeralda-Mineral County line to Rhodes and from Rhodes to Mina to cost $250,000; Pershing County — 1.22 miles of new construction in town of Lovelock and 16 miles reconstructing from east city limits to Lovelock to Zola to cost $104,000; Washoe County — 28 miles from Sparks city limits to Washoe-Lyon

2¢ Show the Way

to Lower Hoisting Costs

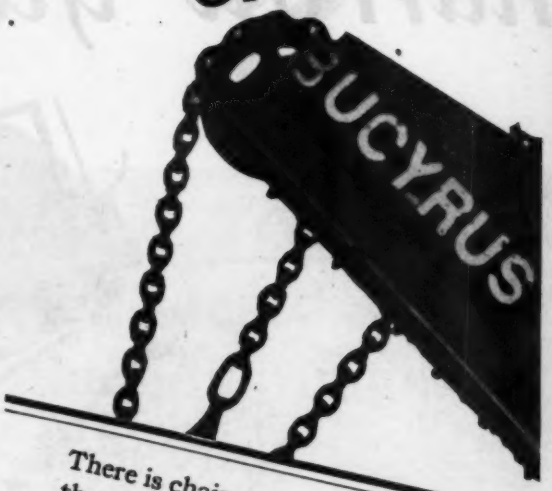
This booklet is a collection of hoisting jobs from all over the country—on all types of work. Given in detail by pictures, facts and figures—they point the way to better, cheaper hoisting methods. Send for your copy today—no obligation.

NOVO ENGINE COMPANY 222 Porter Street LANSING, MICHIGAN

NOVO HOISTS

Clarence E. Bement Vice-Pres. & Gen. Mgr.

Speaking of Chain



There is chain — and other chain. And then again there is Taylor Chain. And that is the last word when speaking of chains. It's the best there is. And the fellows who use it do so because they know Taylor-Mesaba Chain pays dividends by cutting down repair delays.

KEEP EXTRA CHAIN ON HAND

S. G. TAYLOR CHAIN CO.

Established 1873

HAMMOND INDIANA

THERE IS ONLY ONE BEST— THAT'S GATKE

***Asbesgraphite* is the highest developed Brake and Friction Material.**

1. IT HOLDS BETTER. No jerking or grabbing.
2. IT WEARS LONGER without adjustment.
3. IT FITS PERFECTLY.
   Made to machined perfection.

And do not forget that we guarantee satisfactory service. The cost of a trial installation is negligible. An investigation which will prove profitable to you. Write us today.

It is not Asbesgraphite unless it is marked "GATKE"

We also manufacture Asbestos Brake Lining in any width, thickness or length

ALL SIZES CARRIED IN STOCK

For Marion, Bucyrus, Monighan, Osgood, Northwest, Byers, Ohio Locomotive, Industrial, P. & H., Keystone Driller, Masillon, Thew, Erie, Page, Moore Speedcrane, Link Belt, And Others.

THOMAS L. GATKE

Manufacturer

Chicago Office: Railway Exchange Building
Factory: Winona Lake, Indiana

ASBESGRAPHITE
ASBESTOS COMPOSITION

For Allis-Chalmers, Nordberg, Wellman-Seaver-Morgan, Ottumwa Iron, Lidgerwood, Mundy, Flory, Mead-Morrison, Orr & Sembower, Clyde, American, Lambert, Thomas Elevator, And Others.

TWIN CITY ENGINES

Buckeye Bucket and Chain Type Trencher, equipped with Twin City 7¼" x 9", 4-Cylinder Engine

"BUILT TO DO the WORK"

MINNEAPOLIS STEEL AND MACHINERY COMPANY, Minneapolis, Minn.

Heavy Duty Engine Manufacturers Since 1903

35 to 140 H.P.

The ever-increasing chain of TWIN CITY users include the following:

Browning—Cranes · Austin—Trenchers · Baldwin—Locomotives · Buckeye—Trenchers · Bucyrus Shovels and Cranes · Cement Gun—Contracting Co · North—West Shovels · Pennsylvania Compressors · Sargent Draglines · Star—Drilling Machine Co · Washington Logging Engines · Willamette Logging Engines

SHOTS FROM THE FIRING LINE — Continued

County line to cost $70,000; White Pine County — 20 miles new work from Nagnusson east and 17 miles from Ely to McGill and from Ely to Keystone, cost $215,000.

Pacific Coast Notes

BY B. H. MC BIRNEY

Call for bids will be issued at once by the Eugene Water Board, C. A. McClain, Superintendent-Secretary, Eugene, Oregon; bids to be opened early in May for the construction of diversion dam and headworks, canal, forebay and penstocks, and power house and tailrace, in connection with construction of Leaburg hydro-electric development, an addition to existing municipal power system. Work will involve in the main: 940,000 cubic yards excavation, all classes; 21,000 cubic yards concrete. The cost of above work is $1,500,000.

Contract has been awarded to Clifton, Applegate & Toole, Hutton Building, Spokane, Washington, for widening cuts, grading roadbeds, reconstructing embankments for the Oregon-Washington Railroad and Navigation Company lines. Most of the work is located between Pendleton, Oregon, and Huntington, Oregon, and between Meacham, Oregon, and Huron, Oregon.

A contract was recently awarded to Healy-Tibbitts Construction Company, 64 Pine Street, San Francisco, who bid $329,948 for constructing Section E of Ocean Beach Esplanade, including reinforced concrete, esplanade, pedestrian subway and sewers.

John Phillips, 582 Market Street, San Francisco, has been awarded contract for constructing channel along San Jose Slough, also levees, removal of trees, etc., the work involving 185,000 cubic yards earthwork. Above work is for Tulare Lake Basin Water Storage District, 109 West 8th Street, Hanford, California.

Note that crowding action

WATCH a Hayward Drag-Line Bucket at work. Note the crowding action. Note how it fills quickly within its own length.

Watch it carry a full load at the proper angle to the dumping point. See how quickly and easily it discharges.

Write for Bulletin 666-A.

THE HAYWARD COMPANY
56 Church St., New York, N. Y.

American Wire Rope
AND
AERIAL WIRE ROPE TRAMWAYS
Send for Illustrated Catalogue
American Steel & Wire Company
Chicago-New York

How Is This for a Mud-Going Outfit?

Trompeter & Sons Find a Way to Defeat Illinois Mud

CAN YOU imagine a round-wheel dump wagon, pulled by mules, carrying eight cubic yards through mud like that? It can't be done. On this job 1½-yard wagons were carrying only half loads and often mired when empty.

It takes a Western Seven-Yard Crawler Dump Wagon, pulled by a crawler-type tractor, to go through Illinois mud with eight cubic yards. Wherever your tractor can go this big wagon, carrying 90% of its load on broad Athey Truss Wheels, can follow — 24 hours a day, speeding up your hauling, increasing your hourly production, lengthening your working season.

Western 7-yard Crawler Dump Wagon

You need Crawler Dump Wagons in your business. Bulletin 27-SE tells the astounding story of their performance. Write today.

WESTERN WHEELED SCRAPER COMPANY
Aurora, Illinois

WESTERN

DUMP CARS AND GRADING EQUIPMENT

In writing to Western Wheeled Scraper Co. please use post card bound in the center of this number.

SHOTS FROM THE FIRING LINE — Continued

At the bond election held March 20th by the Salt River Valley Water Users Association of Phoenix, Arizona, a proposition to vote $4,100,000 for Stewart Mountain project failed to carry by a small majority. A new bond election will be held soon. Plans call for construction of the Stewart Dam about ten miles below the Mormon Flat Dam, and for the development of an additional 7000 kva. for the Central Arizona Light and Power Company. The proposed Stewart Mountain dam will be 170 feet high above bedrock, 1200 feet in length at the top, including spillways, and 150 feet at the river bed. The structure will involve about 80,000 cubic yards concrete. Mr. C. C. Cragin is superintendent of the association.

Mr. S. A. Hart has been appointed city engineer of the City of Sacramento, California, succeeding Mr. Allen Wagner, who has gone into the contracting business.

TRADE NOTES

The *Hazard Wire Rope Company, Wilkes-Barre, Pennsylvania,* has been given license to manufacture "Tru-Lay Preformed Wire Rope." This type of rope and fittings was introduced several years ago by the *American Cable Company, Inc.* The Hazard Wire Rope Company has for many years been recognized as a manufacturer of wire rope of the highest quality, and is probably the oldest manufacturer in its line in the United States.

Licenses have been previously granted by the American Cable Company, Inc., to the following manufacturers:

W. W. BOXLEY SON & CO.
110 ROANOKE VIRGINIA
Isn't it Significant
that so many industrial plants and contractors throughout the country prefer Koppel Air Dump Cars? Critical comparisons have brought them to this inevitable conclusion.
The standard all steel design, the quick, positive air dump discharge and its ability to dump the load well clear of track are features that have established this preference.
Do you have our descriptive Bulletin
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Air Dump
CARS

Where are *you*?

Digging sticky clay in New Orleans; the owner reports that this WILLIAMS has proved *"An unequalled digger"*.

WILLIAMS Buckets can be seen at work everywhere — successful in the hardest service.

WHETHER you are digging hardpan in California, gumbo in Texas, coral rock in Florida, stiff clay in New York State —

We can put you in touch with contractors who report: "Bigger outputs with our WILLIAMS Buckets than with any others we have used."

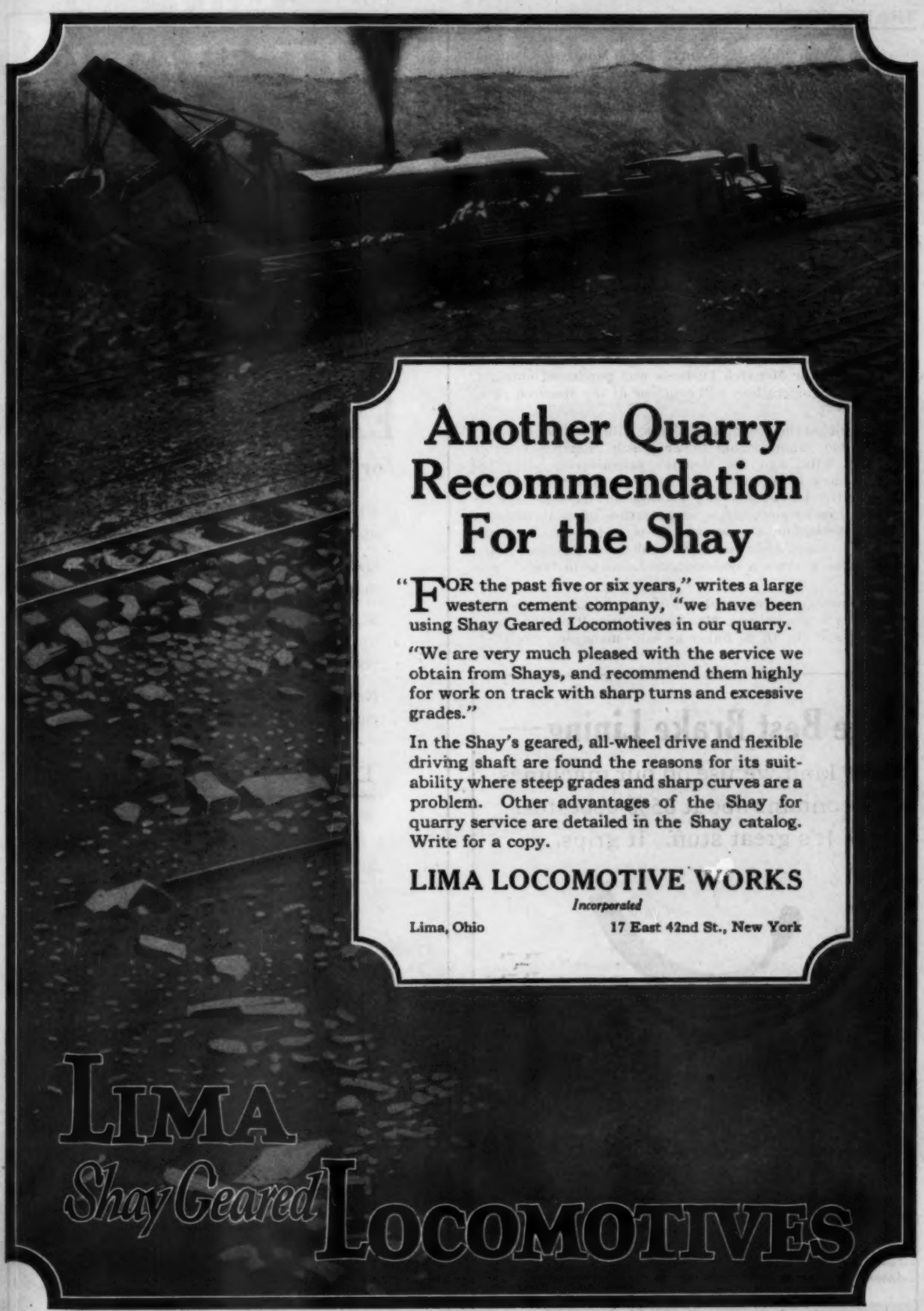
The WILLIAMS is all bucket — *"Built to Dig, and Last While Digging"*. Extra steel is built into the scoops, where it adds to the bucket's durability as well as its digging power.

WILLIAMS "Double-Arch" Dragline — you'll never see the sides of this bucket drawing in.

Write for our free Bucket Book, showing photos of WILLIAMS Buckets on the job — and giving the reports of contractors using them.

G. H. WILLIAMS COMPANY
603 Haybarger Lane, Erie, Pa.
Branch Offices: New York, Pittsburgh, Cleveland, Chicago

WILLIAMS
FAST-DIGGING BUCKETS



Another Quarry Recommendation For the Shay

"FOR the past five or six years," writes a large western cement company, "we have been using Shay Geared Locomotives in our quarry.

"We are very much pleased with the service we obtain from Shays, and recommend them highly for work on track with sharp turns and excessive grades."

In the Shay's geared, all-wheel drive and flexible driving shaft are found the reasons for its suitability where steep grades and sharp curves are a problem. Other advantages of the Shay for quarry service are detailed in the Shay catalog. Write for a copy.

LIMA LOCOMOTIVE WORKS

Incorporated

Lima, Ohio — 17 East 42nd St., New York

LIMA *Shay Geared* LOCOMOTIVES

In writing to Lima Locomotive Works, Inc., please use post card bound in the center of this number.

TRADE NOTES — Continued

Dominion Wire Rope Company, Ltd., Montreal, Canada, largest producers of wire rope in Canada; Bruntons, Musselburgh, Scotland, an old and well-known company licensed for Great Britain; and Felton & Guilleaume Carlswerk, Cologne, Germany, largest manufacturers of wire rope in Europe.

General offices of the *S. G. Taylor Chain Company* are now located, with their plant, in *Hammond, Indiana*, and all correspondence should be sent to them at that point. They are, however, maintaining a sales office in Chicago.

The Monarch Tractors Corporation of Springfield, Illinois, was recently purchased by the *Allis-Chalmers Manufacturing Company of Milwaukee, Wisconsin.*

Extensive investigations were made by executives of the Milwaukee Company of the track-type tractor industry, and specifically of the Monarch Tractor. As a result of this investigation, the Monarch business was purchased outright. Manufacturing operations will continue at the Monarch plant in Springfield.

In acquiring the Monarch business, Allis-Chalmers obtains the valuable patent rights under which Monarch tractors have been built, and the Monarch organization gains the Allis-Chalmers background with the opportunities it offers for executive, purchasing and manufacturing economies, as well as a tremendous sales organization of branches and agencies throughout the world. It is stated that arrangements have been made to install additional machinery and equipment to provide a considerable increase in tractor production.

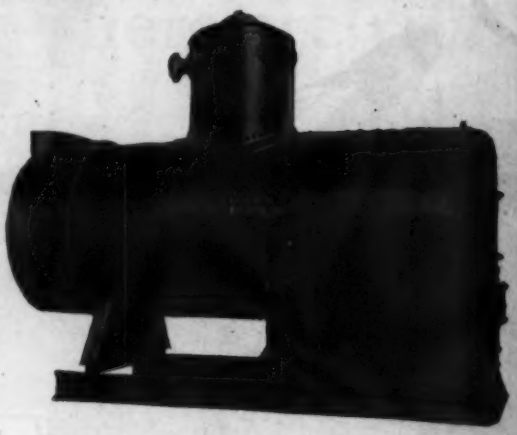
No changes are contemplated in the Monarch executive and factory organizations, Mr. R. W. Gotshall continuing as president, and Mr. H. B. Baker as sales manager.

The Best Brake Lining—

The kind we use on our machines —contains about 85% asbestos. It's great stuff. It grips.

More asbestos = more resistance to heat—longer life—fewer renewals—and—less expense.

BUCYRUS-ERIE COMPANY
SPECIALTY DEPARTMENT
SOUTH MILWAUKEE, WIS., U. S. A.



EXACTLY RIGHT
for your particular machine

PRESSURE ENOUGH to speed her up and handle the hardest digging.

CAPACITY ENOUGH for all demands and at reasonable fuel cost.

SUBSTANTIAL ENOUGH to stand up to your kind of work, year after year, without breakdowns.

Nothing less than the highest quality can be **EXACTLY RIGHT.**

DO YOU LOOK FOR

JOHNSTON BROS., Inc.
Specializing in Boilers for Contractors' Equipment
FERRYSBURG, MICHIGAN